

**WHAT IS CLAIMED IS:**

1. A method of energizing a plasma antenna using power from the discharge of an electropulsion engine comprising the steps of:
  - providing a solid bar of Teflon
  - contacting an electrode with said solid bar of Teflon;
  - charging a capacitor using a power processing unit;
  - firing a spark ignitor to create an initial conducting path for a primary discharge.
  - discharging electromagnetic particles initiated by pulse forming circuitry;
  - releasing energy from said capacitor across said electrode gap;
  - ablating several layers of said Teflon bar, said ablation products ionizing and accelerating by an electromagnetic Lorenz force, thereby generating a pulse.
2. The method of energizing a plasma antenna claim 1 wherein said releasing step further comprises releasing energy from said capacitor in the amount of tens of Joules.
3. The method of energizing a plasma antenna of claim 2 wherein said releasing step further comprises releasing energy from said capacitor in an amount of tens of Joules over a time scale of several microseconds.
4. The method of energizing a plasma antenna of claim 1 wherein said charging step further comprises charging a capacitor using power from an aerospace platform.
5. The method of energizing a plasma antenna of claim 1 wherein said ablating step further comprises ablating several layers of said Teflon bar, said ablation products ionizing and accelerating by an electromagnetic Lorenz force to a velocity of 10-20 km/sec.
6. The method of energizing a plasma antenna of claim 1 wherein said ablating step further comprises ablating several layers of said Teflon bar, said ablation products including a variety of molecular fluorocarbons, ionizing and accelerating by an electromagnetic Lorenz force, thereby generating a pulse.
7. The method of energizing a plasma antenna of claim 1 wherein said ablating step further comprises ablating several layers of said Teflon bar, said ablation products ionizing and accelerating by an electromagnetic Lorenz force, thereby generating a pulse of short duration.

8. A plasma antenna system comprising:
  - a propellant and feed system;
  - a capacitor charging power processing unit;
  - an energy storage capacitor, wherein said energy is released over an electrode gap and resultant ablation products are ionized and accelerated by an electromagnetic force, thereby producing a pulse.
9. The plasma antenna system of claim 8 wherein said propellant and feed system is a compact solid bar of Teflon and a negator spring.
10. The plasma antenna system of claim 8 wherein said capacitor charging power processing unit uses power from an aerospace platform.
11. The plasma antenna system of claim 8 wherein said plasma antenna is a directional modulation plasma antenna.
12. The plasma antenna system of claim 8 further comprising a spark ignitor for creating an initial conducting path for primary discharge.